

**Tiffany, Bruce**

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**From:** Tiffany, Bruce  
**Sent:** Tuesday, June 27, 2006 1:38 PM  
**To:** Renaud, Rick  
**Cc:** Stern, Jeff  
**Subject:** RE: Further Source Control Work at KCIA

Hi Rick;

Coprostanol and BEHP are unique compounds and would naturally biodegrade at different rates under different conditions. However, the literature indicates that they are both essentially non-biodegradable in aquatic sediments. Since the vaults were last cleaned just a couple of years ago, I wouldn't expect biodegradation to be a significant factor.

I can understand the interest in reviewing the full data set, but we have enough information to do further work in the 1541/1680 sub-basins without receiving Ecology's prior approval. In fact, by the time we do receive a determination from Ecology, we could be missing a few months. If we collect samples and conduct inspections now, we could have information back in sufficient time to do some focused source control or source removal (if needed). Unfortunately, the Slip 4 sediment remediation "go/no go" decision is in early 2007. This timeframe does not allow for too many gaps in time.

- Bruce

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**From:** Renaud, Rick  
**Sent:** Tuesday, June 27, 2006 10:50 AM  
**To:** Tiffany, Bruce  
**Cc:** Stern, Jeff  
**Subject:** RE: Further Source Control Work at KCIA

Is it possible that there might be some degradation of coprostanol relative to the BEHP that would result in differing environmental partitioning relative to the biosolids?

I would like to review the full set of analytical results and review with Ecology before proceeding with the next steps.

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**From:** Tiffany, Bruce  
**Sent:** Tuesday, June 27, 2006 10:05 AM  
**To:** Renaud, Rick  
**Cc:** Stern, Jeff; Salazar, Raleigh  
**Subject:** Further Source Control Work at KCIA

Hi Rick;

Although we have not received all of the data from the lab, the information received to date indicates that there are issues of concern for King County in the area of source control. Specifically, it is important that the Vault 1541 issue is addressed and that we start collecting samples in areas tributary to Vault 1680.

If KCIA does not have the manpower to do this work, Industrial Waste has staff that can do most of it. However, there are some aspects of the work that will need to be conducted by KCIA or by a King County contractor.

Here is a summary of information known to date:

Vault 1541

The immediate appearance of the vault water and sediments indicates that there is a water quality issue for ongoing discharges to the storm drainage system. Field observations, supported by analytical results, indicate that there are two or more sources of waste that contributed to the contents of the vault.

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**Washing of Biosolids Trucks:** I checked with our lab and obtained some preliminary data from the semivolatile organic compound (SVOC) analysis of the Vault 1541 sediment sample. After converting to dry-weight, the concentration of coprostanol was approximately 36 mg/kg and the concentration of bis-2-ethylhexylphthalate (BEHP) was approximately 56 mg/kg. Since coprostanol is an indicator for fecal matter, there is a high probability that the biosolids truck washing operation was a source. Although, if there is an unknown sanitary connection to this system, that could be a contributor as well. (Note: The SVOC data provided are preliminary and final numbers may change.)

It appears that control of the biosolids truck-washing source is needed as well as further investigations to determine if there are other potential concerns.

**KCIA Maintenance Shop:** If we assume that the coprostanol source is from the washing of the biosolids trucks, then there is a question about the ongoing source of BEHP. A review of WTD treatment plant analytical data indicates that King County biosolids routinely have coprostanol concentrations greater than ten-times that of BEHP. However, since the Vault 1541 sediment sample had a higher BEHP level than coprostanol, this indicates that there is another important source contributing to the waste accumulation in Vault 1541. In addition, our lab indicated (qualitatively) that the chromatogram from the SVOC analysis appeared to have hydrocarbons in the range of lube oil.

Although I haven't seen all of the KCIA shop, what I have seen seems to indicate a fairly clean operation. However, further investigations are needed to see if there are some old underground piping connections to the storm drainage system. To make sure we aren't missing anything, an inspection of the entire facility also should be conducted.

**Show Quality Metal Finishing:** Information from IW staff indicates that this neighboring property has the potential to be a source for stormwater contamination. Evidently, this facility does not have floor drains or a sanitary sewer connection. Their waste is collected in drums that are stored outside their facility until they are hauled off for disposal.

When we receive metals, SVOC, and TPH data back from the lab, that will tell us a lot more about this potential source. An inspection of this facility will be important.

#### Vault 1680

The duplicate samples collected at Vault 1680 had Total PCB values of approximately 2 mg/kg. Since all of the other stormwater vault results were less than ~ 0.75 mg/kg for Total PCBs, we should investigate potential sources that are tributary to this vault. It is important that we chase down potential sources in this area, or at least start the process of chasing them down, so we don't find ourselves in the position of being caught flat-footed if Ecology wants us to conduct further work in this area.

#### Caulking

Some areas of KCIA have exposed caulking material that may or may not contain PCBs.

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Specifically, here are the WTD source control recommendations:

#### Vault 1541

**Remove Wastes from Vault:** Since the contents of the vault are a concern, the vault should be pumped out. The sludge from the vault should be characterized and properly disposed. The wastewater from the vault should be treated (as needed) and discharged to the sanitary sewer. For the discharge to the sanitary sewer, KCIA will need to obtain an authorization from the Industrial Waste Program. For obvious reasons, the Industrial Waste Program can't be on both sides of the permitting process.

Removal of the wastes from the Vault would likely require the rental of a water-tight roll-off container or storage tank or both.

**Catch Basin Sampling:** Catch Basin Sampling: Sediment samples should be collected from the following catch basins:

- CB1082
- CB1079
- CB1077/CB1078 (2-point composite)
- CB1540

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The samples should be analyzed for the following parameters:

- SVOCs
- Metals
- TPH
- PCBs
- Total Solids
- Total Organic Carbon

**Source Control Inspections:** Full inspections of all facilities potentially tributary to Vault 1541. Dye or smoke testing of pipelines also should be included.

Vault 1680

**Catch Basin Sampling (For Analysis):** Catch Basin Sampling: Sediment samples should be collected from the following catch basins and analyzed:

- CB1678
- CB1491
- CB1140
- CB1149
- CB1153

The samples should be analyzed for the following parameters:

- PCBs
- Total Solids
- Total Organic Carbon

**Catch Basin Sampling (Extract and Hold):** Catch Basin Sampling: Sediment samples should be collected from the following catch basins, extracted and held until receipt of sample results from the 1<sup>st</sup> group:

- CB1490 (linked to CB1491)
- CB1492 (linked to CB1491)
- CB1139 (linked to CB1140)
- CB1141 (linked to CB1140)
- CB1148 (linked to CB1149)
- CB1152 (linked to CB1153)
- CB1480 (linked to CB1153)

Each sample that is selected for analysis should be analyzed for the following parameters:

- PCBs
- Total Solids
- Total Organic Carbon

Caulking

KCIA should identify areas that could potentially have PCB caulking material and see where these areas are in relation to the stormwater vaults that were sampled.

If KCIA identifies areas of concern, IW can collect samples of caulk material and submit them for laboratory analysis.

## Conclusion

There is a LDW Source Control Work Group meeting on July 11<sup>th</sup> where I will need to provide an update on the status of Slip 4 source control. I will mention the issues surrounding Vault 1541 and the agencies and other LDWG members will undoubtedly

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ask what King County is doing to address the situation. It is important that we get moving on this.

As for who should pay for this work, since this is a stormwater issue, KCIA should be paying for the costs of source control. However, since it appears that WTD is likely one of the contributors to the water quality issues at Vault 1541 it is fair to have WTD pay a portion of the costs attributed to the amount of contamination originating from the biosolids truck washing operation.

IW can do a fair amount of this work, but we will need to get approval from KCIA. This scope is greatly expanded beyond the original sampling project for the eight stormwater vaults.

Please let me know how you would like to proceed and what I can do on this end to expedite the process.

Thanks.

Bruce

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